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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/088,090
Filing Date: June 21, 2002
Appellant(s): ARKINSTALL ET AL.

Daniel J. Pereira
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed July 27, 2005 appealing from the Office action mailed Dec. 29, 2004.

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(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

(A) 112 first paragraph—New Matter

Claims 1, 7-8, 17-19, 29-35, 38-39, 41-45 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Please note that the instant amendment limiting the scope of the generic concept to R3 and R4 are both hydrogen *together with the subcombination of Markush elements as now recited in the "currently amended" claim 1* is NEW MATTER.

Removal of all NEW MATTER is required. In re Ressmussen 210 USPQ 325.

Per applicants' request in the preliminary response filed on Oct. 18, 2004, that the specification should be reviewed in accordance with the Sorenson 3 USPQ2d 1462 decision

whether the disclosure *reasonably* convey to one skilled in the art that applicants are in possession of the instantly amended generic scope, the following observation was made:

On page 10 of the specification, an explicit description with respect to the generic support of the invention has been clearly provided that **at least one of R^3 and/or R^4 *must* be an amino acid** in combination with the generic concept of other Markush elements. Therefore, support for R^3 and R^4 as hydrogen to be combined with *the subcombination of Markush elements as now recited in the "currently amended" claim 1* was not found. NO GENERIC DESCRIPTION can be found for the instantly amended scope of R^3 and R^4 as both hydrogen *together with the subcombination of Markush elements as now recited in the "currently amended" claim 1.*

The unsupportive nature of the currently amended generic concept of claim 1 was further noted that not only was there no description for the generic "concept" wherein both R3 and R4 are hydrogen to be combined with *the subcombination of Markush elements as now recited in the "currently amended" claim 1*, also, the instantly amended claim1 **does not encompass the explicitly disclosed species wherein both R3 and R4 are hydrogen.** Please note that all the compounds of claim 9 have an R6 being alkyl substituted with a "heteroarylamino" moiety (see CA 134:266198 structural delineation and nomenclature for the compounds). The instantly amended claim 1 is drawn to R6 being substituted $C_{1\text{-}6}$ aliphatic alkyl. Reading "substitution" of this alkyl moiety in light of the specification on pages 11-12 wherein the preferred embodiment was defined for the R6 substitution (see paragraph bridging the two pages), ***none*** of the substituents are aryl or heteroaryl amino. It is noted that the substituents disclosed on page 11-12 paragraph bridging delineated semistructurally, are aryl-, heteroaryl-, NH_2aryl-, NH_2heteroaryl-, arylO-, and heteroarylO- (please note that the bonding is at the last descriptive structure). To one having ordinary skill in the chemical art, no description or imaged description based on the above recited moieties in the specification can be read into a *heteroarylamino* which must be the requirement for claim 1 to encompass the compounds of claim 9. Therefore, a skilled person in the art given the specification as a whole would be provided that applicants are in possession of those compounds on page 12 lines 11-23, but no concept or any imagination can be found to support the instant amended claim 1 wherein claim 9 is improperly dependent upon since claim 1 does not read on claim 9 compounds.

(B) *Claim objection.*

Claim 9 and 29 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim, or amend the claim to place the claim in proper dependent form, or rewrite the claim in independent form. Please note that the base claim 1 as now amended, reading in light of the specification, does not contain the R6 moieties as found in claim 9, thus, claim 9 is broadening of the base claim.

(C) *112 First paragraph rejection*

Claims 1, 7-8, 17-19, 29-35, 38-39, 41-45 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement and as failing to comply with the enablement requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention and was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Please note that as a correlated rejection as described supra in section above, the claims lack description and enabling support. The instantly amended claims do not contain compounds described in the specification, and the method of using the compounds for such an array of enormous utility in treating all autoimmune diseases and/or neuronal system is incredible. Please note that autoimmune diseases include autoimmune haemolytic anaemia, autoimmune hepatitis etc. (see online print out from Medical dictionary) and a disease of the neuronal system encompassed from headache to schizophrenia to learning disability. No descriptive and enabling support can be found in the specification for such breadth, and the claimed scope is therefore broader than the descriptive and enabling disclosure.

Further, the claims of treating such disorder of the autoimmune and/or neuronal system constitutes "reach through claims". Applicants are urged to consult the trilateral project B3b and In Print by Baker Botts for understanding of lacking 101 and 112 support with reach through claims. In addition, no **nexus** can be found in the record that a single active compound can be used in treatment which varies from epilepsy, to Alzheimer's disease, to head drama, to spinal

cord injury, and all autoimmune diseases for which no descriptive support can be found (see definition from Univ. oncology).

Further, the changing of modulating to "down regulate or inhibit" lacks antecedent basis in the specification. The argument that it is not necessary to have literal basis for the terms is erroneous. Please note that modulation encompasses both enhancement and inhibition. To change to down regulate *without* literal support is *new matter* since no descriptive support can be found that the *in vitro* inhibition is physiologically down regulation. Please note that physiologically, inhibition of "receptor" can be either up-regulation or down-regulation, no descriptive support can be found that such in vitro inhibition has any nexus to a physiological down-regulation as currently amended.

(D) *103(a) rejection*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,646,149.

Vermeulin et al. '149 disclosed generically bispolyamines that are inhibitors of polyamine transport system. A structurally similar compound is disclosed on sheet 29, compound 1233 wherein the difference between the prior art compound and claim 1 is a methylene which is inserted between R3R4 carbon and the carbonyl moiety of the instant claim when R6 is substituted alkyl without limitation. The linker group being one or two carbons is taught generically at col. 15 lines 30-65. This generic teaching guided by the clear exemplification of the 1241 compound on sheet 29 renders the instant one carbon linker obvious. The instant claim is merely the picking and choosing of a more limited combination of the generically disclosed alternatives by Vermeulin et al. '149. In absence of unexpected results,

there is nothing unobvious in picking some among many of the prior art. In re Lemin 141 USPQ 814.

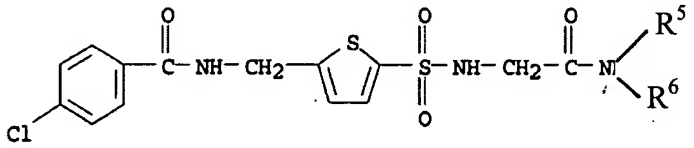
(10) Response to Argument

(A) New matter rejection

Appellants argued with the recitation (page 5 of brief) of description on page 11 lines 10-25 of the specification which is copied herein:

> In preferred sulfonyl amino acid derivatives according to formula I, Ar^1 is an unsubstituted or substituted phenyl, preferably a 4-chlorophenyl group, X is preferably O, R^1, R^2, R^3 and R^4 are preferably hydrogen, n is 1, Ar^2 is preferably thienyl, R^5 is H or C_1-C_6-alkyl.
>
> In said preferred embodiment, R^6 is selected from the group comprising or consisting of H, a substituted or unsubstituted C_1-C_6-aliphatic alkyl-e.g. a C_1-C_6-alkylamino aryl, a C_1-C_6-alkylamino heteroaryl, a substituted or unsubstituted cyclic C_4-C_8-alkyl containing optionally 1-3 heteroatoms and being optionally fused with an unsubstiuted or substituted aryl or heteroaryl; or R^6 is an unsubstituted or substituted aryl or heteroaryl.
>
> The above mentioned aryl or heteroaryl groups are optionally substituted by substituted or unsubstituted C_1-C_6-alkyl, like trihalomethyl, substituted or unsubstituted C_1-C_6-alkoxy, substituted or unsubstituted C_2-C_6-alkenyl, substituted or unsubstituted C_2-C_6-alkynyl, amino, acylamino, aminocarbonyl, substituted or unsubstituted C_1-C_6-alkoxycarbonyl, aryl, carboxyl, cyano, halogen, hydroxyl, nitro, acyloxy, sulfoxy, sulfonyl, C_1-C_6-thioalkoxy.

Based on this description, the support is for the compounds structurally delineated as following:



wherein the R^5 and R^6 are as described in the above paragraph.

The convoluted tabulation of the table on page 6 is an attempt to mislead the PTO into reading meaning into the claims from terms found in various parts of the specification not related to the above specifically described preferred embodiment. Please note when comparing the table on page 6 and the description on page 10 of the specification, none of the support said to be found on page 10 for the individual variables was found.

Contrary to not finding support for the instant claim 1on page 10 of the specification, clear evidence is found on page 10 to support the NEW MATTER issue.

Please note that on page 10 lines 4-5, it was explicitly disclosed that for R^3 and R^4, *at least one of R^3 and/or R^4 must be an amino acid residue.* On page 10, lines 22-25, it was clearly delineated that *"According to a preferred embodiment, at least one of R^3 and/or R^4 is selected from the group consisting of the following natural amino acid residues: alanyl, arginyl, asparaginyl, aspartyl, cycteinyl, glutaminyl, glutamyl, glycyl, histidyl, isoleucyl, leucyl, lysyl, methionyl, phenylalanyl, prolyl, seryl, theonyl, tryptophanyl, tyrosyl, valyl"*. With this explicit description in the specification, at least for formula I of page 9 of the specification, the R^3 and R^4 moieties cannot **both** be hydrogen.

While the specification such as recited by the attorney with respect to page 11 (see above), *also* disclosed "other" compounds wherein R^3 and R^4 can both be hydrogen, such description can only support the particular compound described i.e. the species of examples 1 or 2 etc. A disclosure to a single disclosed species does not support a generic description for which the single disclosed species was explicitly excluded by the generic description.

The creation of the instantly amended claims to include the single disclosed species of compounds explicitly excluded by the generic description is NEW MATTER. Such creation not only finds no antecedent basis in the specification but also created the issue of lacking antecedent basis for the dependent claims 9 and 29. While the attorney of record can present each disclosed species of the compound in an independent claim to the each disclosed compound, the attempted incorporation of these explicitly excluded species into a newly created generic claim by mixing and recombining the terms created NEW MATTER.

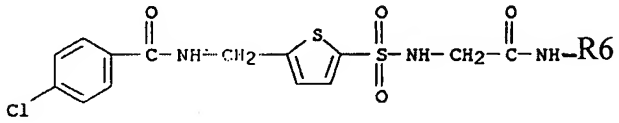
The law requires the claims to be drawn to "what" the inventors considered to be their invention i.e. as disclosed in the original application (which is also identical in the priority document), not what the attorney of record can create from the terms of the specification.

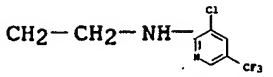
(B) *Objection of claims*

Appellants argued that the R6 moiety of base claim 1 reading in light of the specification would encompass compounds of claim 9 and recited the definition of R6 on page 8 as:

> **"Substituted or unsubstituted" : Unless otherwise constrained by the definition of the individual substituent, the above set out groups, like alkyl, heteroaryl, alkenyl, alkynyl and aryl etc. groups can optionally be substituted with from 1 to 5 substituents selected from group consisting of C1-C6-alkyl, acetoxy, alkoxy, alkenyl, alkynyl, amino, aminoacyl, aminocarbonyl, alkoxycarbonyl, aryl, carboxyl, cyano, halogen, hydroxy, nitro, sulfoxy, sulfoxy, thioalkoxy, trihalomethyl and the like.**

One of the compounds as claimed in claim 9 is delineated (see CA 134:266198 of record) structurally as following:



wherein R6 is  i.e. alkyl substituted by pyridylamino .

Please note that in the above description, no antecedent basis can be found for this R6 which is alkyl substituted by heteroarylamino. The impropriety of dependency is clearly evidenced.

(C) *112 first paragraph rejection*

Applicants argued that the specification unequivocally describes the compounds of formula I and how to make and how to use them on pages 15-17 and on page 13 and recited the following:

> . . .the compounds pursuant to formula I are useful for the treatment or prevention of immuno- and/or neuronal-related diseases or pathological states in which inhibition of JNK1 and/or JNK2 and/or JNK3 plays a critical role such as epilepsy; neurodegenerative diseases including Alzheimer's disease, Huntington's disease, Parkinson's disease; retinal diseases; spinal cord injury; head trauma, autoimmune diseases including multiple Sclerosis, inflammatory bowel disease (IBD), rheumatoid arthritis; asthma; septic shock; transplant rejection; cancers including breast, colorectal, pancreatic and cardiovascular diseases including stroke, cerebral ischemia, arteriosclerosis, myocordial infarction, myocordial reperfusion injury.

Please note that "none" of the compounds disclosed for formula I wherein at least one of R3 and/or R4 is an amino acid was made nor was any of such compounds evidenced to have any "critical role" in inhibiting JNK1, JNK2 or JNK3. In view of the enormous number of compounds and the enormous scope of possible diseases encompassed by the term "immuno- and/or neuronal-related diseases or pathological states", the specification lacks the required sufficiency and guidance in supporting the claims, i.e. compounds having at least one of R3 and/or R4 is an amino acid possessing the "critical role" in inhibiting JNK1, JNK2 or JNK3. In absence of any description of what role and with what conditions will the compound play in inhibiting JNK1, JNK2 or JNK3 pathway, one having ordinary skill in the art is given no guidelines as to how to formulate dosages, how to administer and where to administer. With the disclosed breadth regarding the scope of the compound and the diversity of diseases, along with insufficient guideline given in the specification, the lack of description and enablement is self evidenced.

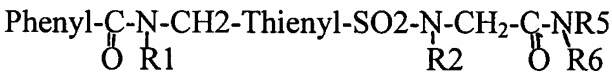
Appellants further argued with respect to the method of treating claims by reciting various disclosures in the specification with screening data as demonstrated on page 32. Please note that compounds 1 and 6 are the first and last compounds recited in claim 9. The lack of

antecedent basis of the base claim for claim 9 has been clearly established in section (B) supra. The limited screening data for two single disclosed compounds (recited on page 13 of the brief) explicitly excluded by the generic description can not offer any descriptive or enablement support for the claimed invention. Further, it is misleading to allege that "the data on page 37 and 39 were derived from experiments performed in vivo i.e. in mice and gerbils". Please note that on pages 37 and 39 only hypothetical "procedures" for testing in mice or gerbils were recited. None of the procedures were "performed" since none of the *test articles* were described. The specification is completely ***devoid*** of any guidance as to the activity nature of the claimed compounds.

(D) *Art rejection over Vermeulin et al. '149*

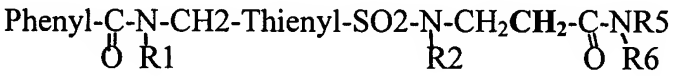
Appellants argued that the '149 patent disclosed many compounds and they are fundamentally different from the instant claims.

Please note that the instant claim 1 is drawn to



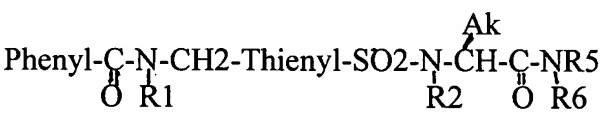
(when formula I of claim 1 Ar1 is substituted or unsubstituted phenyl, Ar2 is thienyl, X is O)

The exemplified compounds of '149 on sheet 29 compound 1233 is:



wherein phenyl is substituted, R1, R2, R5 are hydrogen and R6 is aminosubstiuted alkyl.

The exemplified compounds of '149 on sheet 29 compound 1241 is:



wherein phenyl is substituted, R1, R2, R5 are hydrogen and R6 is aminosubstituted alkyl.

Therefore, the art clearly taught the variation of a linker chain between the NR2 and the carbonyl moiety and the ordinary skill person was offered the concept of modifying 1233 with 1241 on the same page i.e. establishing a prima facie structural obvious.

If appellants considered the '149 compounds 1233 and 1241 are fundamentally different, then, appellants must point out wherein in the claims such fundamental difference is found since structurally, an obvious variation was clearly demonstrated supra.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Celia Chang
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